

Glossary

7-DAY Q2 FLOW: Lowest flow magnitude calculated over 7-days each year and calculated to have a recurrence interval of 2 years.

7.5" TOPOGRAPHIC MAP: These are the standard topographic maps produced by USGS. They are also called quadrangles. They are 7.5 minutes square, which is about six miles in the East-West direction and eight miles in the North-South direction. There are 1,300 topographic maps covering the state of Missouri.

11-DIGIT HYDROLOGIC UNITS: The hydrologic units are part of a watershed designation hierarchy of the United States Geological Survey (USGS). The Bourbeuse River watershed is designated as an 8-digit watershed, it is further subdivided into eight 11-digit units.

14-DIGIT HYDROLOGIC UNITS: The 14-digit units are further subdivisions of the 11-digit watersheds.

90/10 RATIO: Ratio describing the variability of stream discharge. It uses the 90% and 10% duration curve value.

1:24,000 AND 1:100,000: These are ratio scales, which are used in maps. One unit on the map will equal the number of units in the ratio on the ground. At 1:24,000 scale, one map inch equals 24,000 inches, or 2,000 feet, on the ground. At 1:100,000 scale, one map inch equals 100,000 inches, or 8,333 feet, on the ground.

ABUTMENT: An artificial abutment is constructed as a concrete gravity section to take the thrust of an *Arch Dam* or a bridge where there is no suitable natural abutment.

ACRE: A measure of area equal to 43,560 square feet (4,046.87 square meters). One square mile equals 640 acres, and is also referred to as a *Section*.

ACTION LEVEL: Level at which a contaminant is harmful to humans

ALLUVIAL SOIL: Soil deposits resulting directly or indirectly from the sediment transport of streams, deposited in river beds, flood plains, and lakes.

AQUIFER: An underground layer of porous, water-bearing rock, gravel, or sand.

ATRAZINE: A herbicide listed by the *U.S. Environmental Protection Agency (EPA)* as a "possible human carcinogen" and found frequently in streams and rivers, particularly following floods and periods of heavy rain and runoff from agricultural lands. Atrazine is used extensively for weed control for corn, sorghum, and sugarcane. Along with another common farm herbicide, *Cyanazine*, atrazine concentrations can soar to levels much higher than federal standards during the peak growing season.

AVERAGE DISCHARGE: In the annual series of the *U.S. Geological Survey's (USGS)* reports on surface-water supply, the arithmetic average of all complete water years of record whether or not they are consecutive. Average discharge is not published for less than 5 years of record. The term "average" is generally reserved for average of record and "mean" is used for averages of shorter periods, namely daily mean discharge.

BACKWATER: (1) A small, generally shallow body of water attached to the main channel, with little or no current of its own. (2) Water backed up or retarded in its course as compared with its normal or natural condition of flow. In Stream Gaging, a rise in Stage produced by a temporary obstruction such as ice or weeds, or by the flooding of the stream below. The difference between the observed stage and that indicated by the Stage-Discharge Relation, is reported as backwater.

BAR: (1) An elongated landform generated by waves and currents, usually running parallel to the shore, composed predominantly of unconsolidated sand, gravel, stones, cobbles, or rubble and with water on two sides.

BED LOAD: Material in movement along a stream bottom, or, if wind is the moving agent, along the surface. Contrast with material carried in suspension or solution.

BENTHIC: Bottom-dwelling; describes organisms which reside in or on any substrate.

BENTHIC MACROINVERTEBRATE: Bottom-dwelling (benthic) animals without backbones (invertebrate) that are visible with the naked eye (macro).

BIOTA: The animal and plant life of a region.

BENEFICIAL USE: The amount of water necessary when reasonable intelligence and diligence are used for a stated purpose.

CHANNELIZATION: The process of stream channel straightening and the removal of obstructions from the channel and stream banks to increase the hydraulic capacity of the stream.

CHANNEL ALTERATION: Any man-made channel changes.

CHANNEL PAVING: The adding of rip-rap or gravel fill, more often concrete, to a stream bank.

CHERT: A variety of silica that contains microcrystalline quartz.

CONCENTRATED ANIMAL FEEDING OPERATION (CAFO): Large livestock (ie., cattle, chickens, turkeys, or hogs) production facilities that are considered a point source pollution, larger operations are regulated by the MDNR. Most CAFOs confine animals in large enclosed buildings, or feedlots and store liquid waste in closed lagoons or pits, or store dry manure in sheds. In many cases manure, both wet and dry, is broadcast overland.

CONTAMINANT: (Water Quality) In a broad sense any physical, chemical, biological, or radiological substance or matter in water. In more restricted usage, a substance in water of public health or welfare concern. Also, an undesirable substance not normally present, or an usually high concentration of a naturally-occurring substance, in water, soil, or other environmental medium.

CRP: The Conservation Reserve Program is a large-scale cropland retirement program that was created as a dual-purpose commodity supply control and soil erosion reduction program. It is a federally funded voluntary program that offers annual rental payments and cost-share assistance to establish long-term resource-conserving covers on eligible land. The Commodity Credit Corporation (CCC) makes annual rental payments based on the agriculture rental value of the land and provides cost-share assistance in an amount equal to not more than 50 percent of the participant's costs in establishing approved practices.

CUBIC FOOT PER SECOND (CFS): The rate of discharge representing a volume of one cubic foot

passing a given point during 1 second. This rate is equivalent to approximately 7.48 gallons per second, or 1.98 acre-feet per day. discharge the volume of water that passes a given point within a given period of time. It is an all-inclusive outflow term, describing a variety of flows such as from a pipe to a stream, or from a stream to a lake or ocean.

DATABASE: A database is a set of related tables that hold information about a specific subject, such as the MDC Pflieger fish database.

DISCHARGE: The volume of water that passes a given point within a given period of time. Discharge is usually presented as cubic feet per second (CFS).

DOLOMITE: A limestone-like sedimentary rock created by pressure on massive beds of compound calcium magnesium carbonate.

ENDANGERED SPECIES: Species survival is in immediate jeopardy through range; faced with extinction.

EROSION: The wearing away and removal of materials of the earth's crust by natural means. As usually employed, the term includes weathering, solution, corrosion, and transportation. The agents that accomplish the transportation and cause most of the wear are running water, waves, moving ice, and wind currents. Most writers include under the term all the mechanical and chemical agents of weathering that loosen rock fragments before they are acted on by the transportation agents; a few authorities prefer to include only the destructive effects of the transporting agents.

ERODIBILITY FACTOR (K): Soil Conservation Service erosion ability factor. A rating of the susceptibility of soil particles to detachment and transport by rainfall and runoff. The K factor is used in the Universal Soil Loss Equation.

EXTIRPATED SPECIES: A species rendered extinct in a given area.

FECAL COLIFORM BACTERIA: Bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all the organisms that produce blue colonies within 24 hours when incubated at 44.5C plus or minus 0.2C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as numbers of colonies per 100 ml of sample.

FLOOD FREQUENCY: A statistical expression or measure of how often a hydrologic event of a given size or magnitude should, on an average, be equaled or exceeded. For example, a 50-year frequency flood (2 percent chance of occurrence) should be equaled or exceeded, on the average, once in 50 years. Also see Hundred-Year Flood, X-Year Flood, and X-Year Flood, Y-Duration Rain.

FLOW DURATION CURVE: Percent of time that flows were equaled to or exceeded for a given period of record.

FORMATION: (Geology) A body of rock or soil of considerable thickness that has characteristics making it distinguishable from adjacent geologic structures.

FRAGIPAN: A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots.

GAGING STATION: A particular location along a stream where systematic measurements of the quantity of water flowing, or water elevations, are made.

GEOGRAPHIC INFORMATION SYSTEM (GIS): A system used to input, store, retrieve and analyze spatial data; [click here for an example GIS](#).

GEOMORPHOLOGY: The systematic description, analysis, and understanding of landscapes and the processes that change them; this is the wing of geology that studies topics like how rivers work and what triggers landslides .

GRADIENT PLOTS: A graph representing the gradient of a specified reach of stream. Elevation is represented on the Y-axis and length of channel is represented on the X- axis.

HABITAT: The environment where an organism lives and is usually found; examples of stream habitats are riffles, runs, and pools.

KARST TOPOGRAPHY: Rugged, hilly landscape formed by the underground dissolution of limestone and dolomite, karst landscapes have springs, caves, and sinkholes; [click here for the National Parks Service's diagram of karst features](#).

LANDCOVER CLASSIFICATION: The range of brightness values of pixels within a satellite image that correspond to a known land use or land cover classes (such as forest, urban, etc.) are used to develop a rule for classification. A classification program is then used to automatically classify pixels in the image that are within the ranges of the various classes defined. Pixels that do not fall into any class are either rejected or placed in the class to which their values are closest to statistically. In effect, landcover classification is a way of automatically mapping a large area by using satellite imagery.

LOSING STREAM: A losing stream is one that loses 30 percent or more of its flow into an aquifer within two miles of flow discharge. In Missouri, losing streams are the result of water being lost to cracks and buried sinkholes which are features of karst topography. The water lost to losing streams usually travels through a network of underground streams and comes out of a spring.

MAJOR ORDER: This shows the entire length of the various ordered streams, to the longest hydrologic length. Brush Creek is a 5th Order stream, but it is not 5th order for its entire length.

MEAN ANNUAL RUNOFF: **The average value of all annual runoff amounts usually estimated from the period of record or during a specified base period from a specified area.**

MISSOURI DEPARTMENT OF CONSERVATION (MDC): Missouri agency charged with: protecting and managing the fish, forest, and wildlife resources of the state; serving the public and facilitating their participation in resource management activities; and providing opportunity for all citizens to use, enjoy, and learn about fish, forest, and wildlife resources.

MISSOURI DEPARTMENT OF NATURAL RESOURCES (MDNR): Missouri agency charged with preserving and protecting the state's natural, cultural, and energy resources and inspiring their enjoyment and responsible use for present and future generations.

NPDES (National Pollution Discharge Elimination System): This is a database that contains information about discharge permits for contaminants. The data is collected by Department of Natural Resources, and maintained in a database by MDC Environmental Services.

Q2/Q20: Ratio of the 2-year to 20-year 7-day average low flows.

NON-POINT SOURCE: Source of pollution in which wastes are not released at a specific, identifiable point, but from numerous points that are spread out and difficult to identify and control, as compared to point sources.

RIPARIAN AREAS (HABITAT): Land areas directly influenced by a body of water. Usually such areas have visible vegetation or physical characteristics showing this water influence. Stream sides, lake borders, and marshes are typical riparian areas. Generally refers to such areas along flowing bodies of water. The term Littoral is generally used to denote such areas along non-flowing bodies of water.

RECURRENCE INTERVAL: Probability of extreme flood events with a given magnitude. Often referred to as the "return time" in years. Example: A 100-year flood has 1/100 or 1% chance of occurring within any year.

RUNOFF: The part of precipitation that appears in surface streams. This is the streamflow before it is affected by artificial diversions, reservoirs, or other man-made changes.

SEDIMENTS: Soil, sand, and minerals washed from the land into water, usually after rain. They pile up in reservoirs, rivers, and harbors, destroying fish and wildlife habitat, and clouding the water so that sunlight cannot reach aquatic plants. Careless farming, mining, and building activities will expose sediment materials, allowing them to wash off the land after rainfall.

STRAHLER: The most widely used stream order classification system. Order increases only if two like-order streams flow together. For example, a third order stream does not become fourth order until another third order stream intersects it.

STREAM ORDER: A hierarchical ordering of streams based on the degree of branching. A first order stream is an unbranched or unforked stream. Two first order streams flow together to make a second order stream; two second order streams combine to make a third order stream. Stream order is often determined from 7.5 minute topographic maps.

TOPOGRAPHIC MAP: A topographic map is a map produced by the U.S. Geological Survey, that represents 7.5" of both latitude and longitude. They are produced at a scale of 1:24,000.

TOPOLOGY: The organization of files and records within a GIS database that define the relationships between vector lines. Topology forms polygons out of separate lines, and shows whether one line is directly connected to another in a network, for instance.

TOWNSHIP: This is one of the divisions used in the Public Lands Survey System. A township is 36 square miles.

UNALTERED CHANNEL: Segments of a stream that man has not channelized or submerged by impoundment.

UNCONSOLIDATED FORMATIONS: Naturally occurring earth formations that have not been lithified. Alluvium, soil, gravel, clay, and overburden are some of the terms used to describe this type of formation.

UTM: Universal Transverse Mercator. This is a series of projections, where the globe is separated into

sixty, six degree longitude, zones. Each zone has it's own central meridian. Most of the state of Missouri is in Zone 15, though parts of the Bootheel are in Zone 16.

WASTEWATER TREATMENT PLANT: A water effluent treatment facility containing a series of tanks, screens, filters and other mechanical, biological, and chemical processes by which pollutants are removed from water. Less frequently referred to as *Waste Treatment Plant*.

WATER POLLUTION: Generally, the presence in water of enough harmful or objectionable material to damage the water's quality. More specifically, pollution shall be construed to mean contamination of any waters such as will create or is likely to create a nuisance or to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, municipal, commercial, industrial, agricultural, recreational, or other legitimate uses, or to livestock, wild animals, birds, fish or other aquatic life, including but not limited to such contamination by alteration of the physical, chemical or biological properties of such waters, or change in temperature, taste, color or order thereof, or the discharge of any liquid, gaseous, radioactive, solid or other substances into such waters. More simply, it refers to quality levels resulting from man's activities that interfere with or prevent water use or uses.

WATERSHED: The total area drained by or contributing water to a stream, lake, or other body of water. A watershed may be a few square miles such as in a small stream or thousands of square miles such as in the Mississippi River.

WATER USE: The amount of water needed or used for a variety of purposes including drinking, irrigation, processing of goods, power generation, and other uses. The amount of water used may not equal the amount of water withdrawn due to water transfers or the recirculation or recycling of the same water. For example, a power plant may use the same water a multiple of times but withdraw a significantly different amount.

WHIP: The Wildlife Habitat Incentives Program is a federally funded voluntary program for people who want to develop and improve wildlife habitat primarily on private lands. It provides both technical assistance and cost-share payments to help establish and improve fish and wildlife habitat.

WILLOW STAKING: The driving of willow stakes into the bank in order to establish bank stabilization.

WRP: The Wetlands Reserve Program is a voluntary program to restore and protect wetlands on private property. It is an opportunity for landowners to receive financial incentives to enhance wetlands in exchange for retiring marginal agricultural land. Landowners may sell a conservation easement or enter into a cost-share restoration agreement with the USDA to restore and protect wetlands